Nova Scotia's Response to H1N1

Summary Report

December 2010

Introduction

In April 2009, an outbreak of a new virus called H1N1 influenza was identified in Veracruz, Mexico. As the virus quickly spread around the globe, Nova Scotia was the first province in Canada with a lab-confirmed case. Soon after, other provinces and countries began reporting cases of the disease. On June 11, 2009, the World Health Organization officially declared H1N1 to be a pandemic.

Nova Scotia put considerable effort into preparing for and responding to the threat of H1N1. This preparation ensured the health system was able to respond to the H1N1 pandemic as it evolved.

The province had one goal in mind throughout the pandemic – to keep Nova Scotians safe and healthy. There was extensive collaboration and cooperation within the health system and government, and among federal, provincial and territorial governments. The Department of Health Promotion and Protection and the Department of Health worked closely with the Public Health Agency of Canada and the other provinces and territories to lead Nova Scotia's response. The Emergency Management Office, the departments of Community Services, Justice, Labour and Workforce Development, and Education, and the Public Service Commission were also involved.

Within the health system, the response was coordinated by senior officials within government, the nine district health authorities, the IWK Health Centre, the continuing care sector, Emergency Health Services, Healthlink 811, and health care providers throughout the province. The response was based on existing plans developed for an influenza pandemic, experience gained during the response to the first wave of H1N1, and the findings of the 2009 Auditor General's Special Report on Pandemic Preparedness.

Early in 2010, Nova Scotia began a lessons learned process to assess our response to H1N1. This process has helped us understand areas where Nova Scotia did well. It has also given us a good understanding of where we need to improve and make changes – changes which will strengthen our response to the next health emergency.

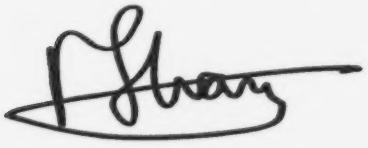
Overall, we believe Nova Scotia's response to the H1N1 pandemic was not only effective, but also appropriate and flexible. We responded well to challenges we faced and achieved one of the best immunization rates in Canada – contributing to Canada's achievement of one of the best immunization rates in the world.

Our response depended heavily on many individuals and organizations. We thank staff and volunteers across the health system who did a tremendous job preventing the spread of the disease and providing care, while also continuing the health system's critical work. These dedicated individuals worked tirelessly in a demanding and continually changing situation.

Health care workers, through their unions, and the province demonstrated their commitment to the health and well-being of Nova Scotians by signing the Good Neighbour Protocol in fall 2009. This agreement, the first of its kind in Canada, helped and will continue to help ensure patients receive good care during this and other emergencies by making it easier for health care providers to go where they are needed most.

We also thank government officials and employees, the media and other organizations such as municipal governments, school boards and businesses for the role they played in getting Nova Scotians the information they needed to protect themselves and their families.

Most importantly, we acknowledge and thank all Nova Scotians. You adopted good practices for helping prevent the spread of H1N1, and you demonstrated patience, support and understanding as we managed this public health issue. It is our privilege to serve you.



Dr. Robert Strang
Chief Public Health Officer
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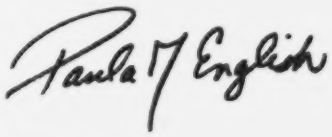

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This report summarizes Nova Scotia's response to the H1N1 pandemic, as well as the lessons learned from this experience.

Summary of Illness

Nova Scotia has had a flu monitoring program in place for a number of years and this program was expanded for H1N1. The program allowed us to detect the first H1N1 cases and closely monitor the spread of both waves of the pandemic.

During the pandemic, the primary method of tracking H1N1 cases was by testing those who were hospitalized or by samples submitted by sentinel physicians. Sentinel physicians are a network of physicians across the province who help monitor illness.

From April 2009 to January 2010, there were 1,334 lab confirmed cases of H1N1 in Nova Scotia. At the height of the illness, only the most serious of cases were being tested for lab-confirmation. For this reason, we believe that many more Nova Scotians had H1N1 than our data shows.

Between April 2009 to January 2010, the disease resulted in 291 hospitalizations, 50 of which were in intensive care units, and seven deaths.

From April 2009 to January 2010, there were **1,334** lab-confirmed cases of H1N1 in Nova Scotia.

Figure 1: Epidemic curve of influenza A H1N1 cases, hospitalizations, and deaths, Nova Scotia, April 2009 to January 2010 (n=1334)

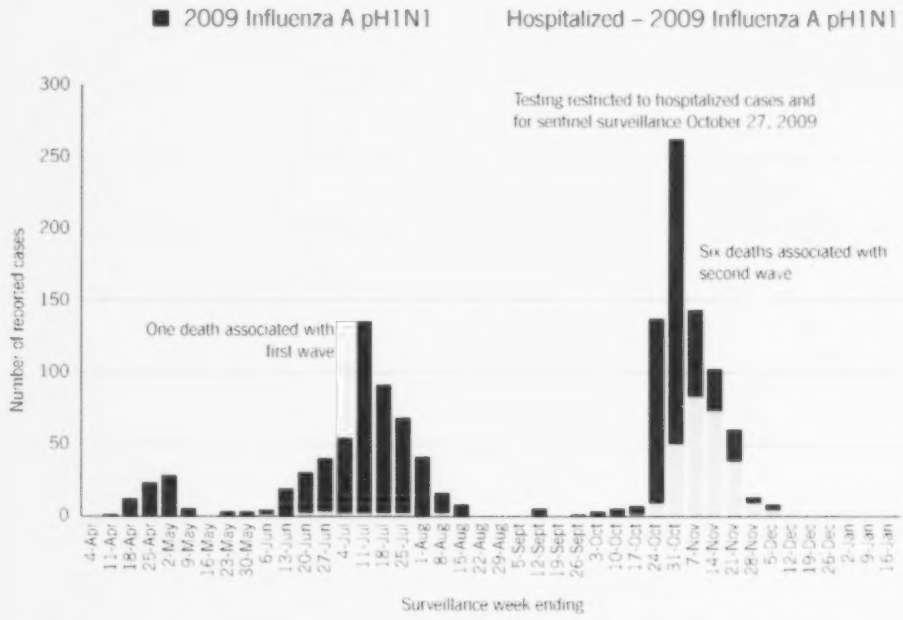
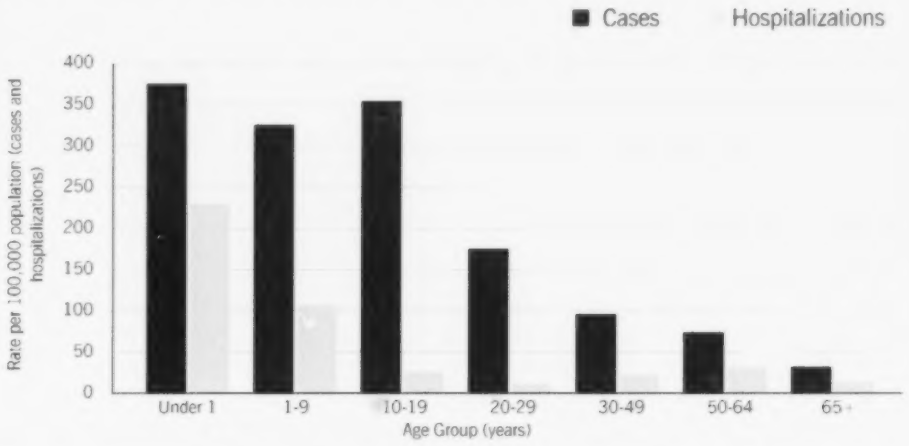


Figure 2: Rate of influenza A H1N1 lab-confirmed cases and hospitalizations per 100,000 population by age group, Nova Scotia, April 2009 to January 2010



The first wave of the H1N1 outbreak peaked in July 2009 and the second wave peaked by the second week of November 2009.

In the first wave, there were 582 lab-confirmed cases, 14 patients were admitted to hospital (six of these were in ICU), and one death occurred.

Hospitalization rates were highest in the under one-year age group, followed by those aged one to nine years, and then adults 50 and over.

In the second wave, there were 752 lab-confirmed cases, 277 patients were admitted to hospital (42 of these were in ICU), and six deaths occurred.

During the second wave, the rates of lab-confirmed cases were highest in children younger than nine years old, and particularly younger than one year old. The lowest rates were in adults above age 65.

Hospitalization rates were highest in the under one-year age group, followed by those aged one to nine years, and then adults 50 and over.

At the height of the second wave, an estimated 27 per cent of all patients who visited emergency rooms had flu-like illness. Sentinel physicians reported about 19 per cent of patient visits were due to flu-like illness, the highest percentage seen in the province over the past five flu seasons.

Immunization Campaign

As with seasonal flu, immunization was the cornerstone of our efforts to limit the spread of H1N1. The immunization campaign against H1N1 was the largest ever undertaken in Nova Scotia – and Canada – with at least 501,846 (or 54 per cent) Nova Scotians being vaccinated against H1N1.

The vaccine was administered by a variety of immunizers including public health nurses, physicians, occupational health and infection control staff in district health authorities, and private nursing agencies. H1N1 vaccines were given to Nova Scotians in a variety of settings, including large community-based clinics, physicians' offices, hospitals, workplaces, and other venues.

Our initial plans were to make vaccine available for all Nova Scotians. This was consistent with all other provinces and territories in Canada. Public health experts recognize that it is typically a challenge to encourage individuals to be immunized against influenza.

During September and early October of 2009, national public opinion data showed there was a significant degree of public apathy toward H1N1 immunization. Then, in late October and early November, all provinces and territories faced an unexpected decrease in vaccine supply. At the same time, demand for vaccine suddenly increased due to two highly-publicized H1N1 deaths in Ontario.

To protect our most vulnerable citizens, we had to change our plans and offer vaccine first to those at greatest risk. Our decision was based on nationally agreed upon risk groups, what we knew about the disease, quantity of vaccine available, and the logistics of delivering such a large immunization program to Nova Scotians.

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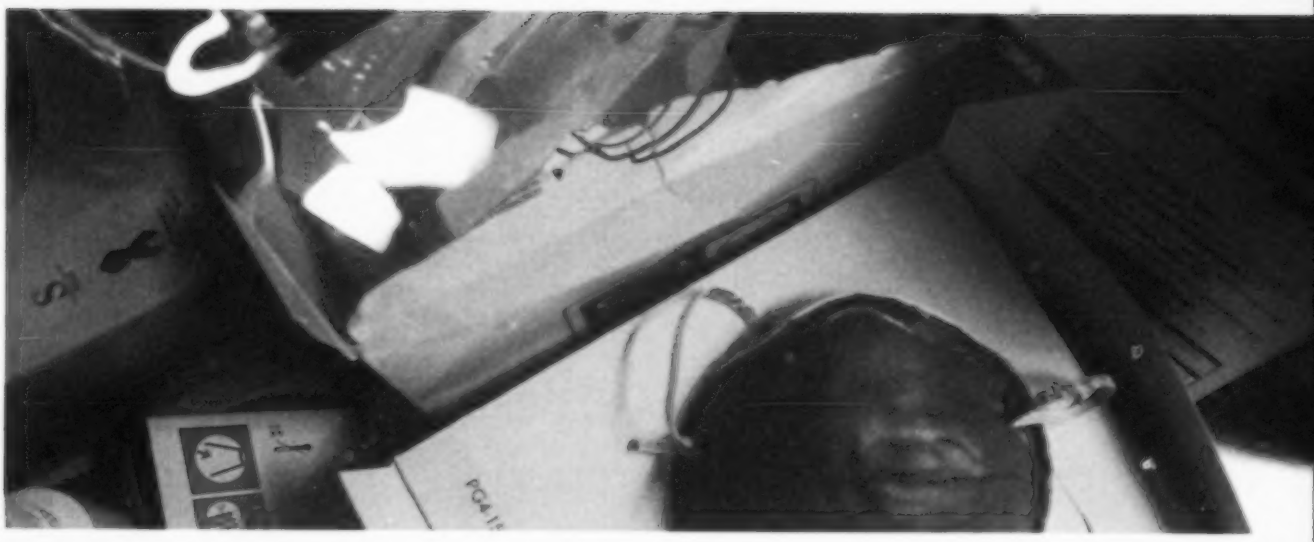
While this approach was absolutely necessary, helping Nova Scotians understand who was eligible for vaccine and why certain priority groups were chosen was difficult. The unanticipated demand created logistical issues such as lineups for which Public Health was not fully prepared. This led to some understandable frustration, confusion and fear among Nova Scotians. While the running of mass immunization clinics adapted and improved throughout the campaign, this is an area that needs attention in future planning.

Following is some key information on vaccine coverage.

- Nova Scotia does not have a comprehensive electronic information system to track vaccine given to Nova Scotians.
- During H1N1, those giving vaccine to Nova Scotians were required to complete immunization records, in an effort to better track vaccine coverage.
- Most Nova Scotians were immunized between the last week of October and end of December 2009.
- Enough vaccine was distributed throughout the province to immunize about 65 per cent of the eligible population: that is, all Nova Scotians except those under six months of age who were not eligible to get vaccinated.
- Based on completed immunization records, we know that 54 per cent of the population of Nova Scotia over the age of six months received a dose of H1N1 vaccine.
- Vaccine coverage varied by age group and risk factors with the highest coverage in those between six and 35 months of age, and the lowest coverage in the 20 to 24-year-old age group.
- An estimated 64 per cent of pregnant women were immunized against H1N1.

Vaccine was administered by public health nurses, physicians, occupational health and infection control staff in district health authorities, and private nursing agencies.

Antiviral Strategy



Along with immunization, treating people who were at increased risk of severe illness due to H1N1 with antiviral medication as soon as possible when they developed flu like symptoms was critical in controlling the spread and severity of H1N1.

Like other provinces and territories, Nova Scotia had obtained a stockpile of antiviral drugs over several years in anticipation of a flu pandemic. At the beginning of the second wave of H1N1, these drugs were distributed to district health authorities and community pharmacies, and were made available at no cost to Nova Scotians who had an increased risk of severe H1N1 illness.

Following is some key information on antiviral distribution:

- A total of 15,315 courses (prescriptions or duration of treatment) of antivirals were released from the provincial stockpile to community pharmacies and district health authorities.
- Of this total, 52 per cent were given out at flu assessment centres set up throughout the province and 48 per cent were distributed through community pharmacies.

The use of antiviral medication worked in reducing the severity of the symptoms for patients with H1N1 and in reducing the spread of the illness to others.

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Health Care System

In anticipation of having to care for large numbers of patients with H1N1 – while, at the same time, continuing to provide care to those with other health concerns – a number of steps were taken in the health care system.

Healthlink 811 was introduced in July 2009. This free telephone service allowed many Nova Scotians to get accurate information and advice regarding how to prevent and treat H1N1, how to recognize the symptoms, where to get the vaccine and what to do if they were sick with flu-like illness from registered nurses on a 24/7 basis. It is believed that this prevented many visits to doctors' offices, clinics and emergency rooms.

To help prevent the spread of H1N1 and reduce visits to doctors' offices and emergency rooms, the nine district health authorities and the IWK Health Centre opened flu assessment centres to assess and treat people who had flu like symptoms. The establishment of these centres, which saw hockey arenas and vacant stores temporarily converted into health care facilities, proved invaluable in relieving the demand on the health care system.

Between November 2 and 29, 2009, a total of **11,420** Nova Scotians visited flu assessment centres.

Following is some key information on flu assessment centres:

- Between November 2 and 29, 2009, a total of 11,420 Nova Scotians visited flu assessment centres.
- The number of flu assessment centres in the province reached a high of 15 during the period of November 12 to 15, 2009.
- At the height of the pandemic, the busiest assessment centres were seeing more than 220 patients on a daily basis.

During both the first and second wave of H1N1, a considerable amount of extra supplies, such as masks, gloves and gowns, were purchased and distributed by the Department of Health to protect patients and staff at health care and continuing care facilities from the virus.

The government and health care unions also signed a Good Neighbour Protocol on October 27, 2009, which allows health care workers to easily move between organizations in the event of staff shortages during an emergency.

In anticipation of a large increase in patients requiring intensive care as a result of H1N1, the Department of Health purchased 80 new ventilators for hospitals and 10 transport ventilators for Emergency Health Services. To prepare for the worst, a protocol to prioritize the use of intensive care beds across the province was developed but, fortunately, was not needed.

Information Sharing (Communications)

From the start of H1N1, it was recognized that a strong, strategic and transparent public information campaign was critical to keeping Nova Scotians informed about all aspects of H1N1. The people of our province needed to know not only about the spread and severity of the virus, but also about what actions they could take to protect themselves and their families, and what to do if they, or family members, became ill. In a health emergency, it is critical that citizens receive accurate, timely and consistent information.

79 per cent of Nova Scotians said they had adequate information about the H1N1 virus.

The departments of Health Promotion and Protection and Health worked closely with Communications Nova Scotia, the nine district health authorities, the IWK Health Centre, and key stakeholder groups in the health system to manage the flow of information to both Nova Scotians as well as key groups. The communications team was also in regular contact with counterparts in other provinces and territories and the federal government.

Officials across provincial government departments worked hard to ensure that Nova Scotians received the information they needed. The communications activities took many forms and used a variety of channels to ensure that all Nova Scotians, especially those who were most at risk of getting sick, were informed.

Members of Nova Scotia's media were partners in communicating critical information to Nova Scotians. Every day during the height of H1N1, updates were sent to media outlets throughout the province or media briefings were held.

Public communication included:

- numerous news releases were issued to coincide with major announcements
- a website dedicated to H1N1was created
- radio, television and print advertising were used to communicate key information
- information was distributed through schools, daycares, municipalities, businesses and other settings
- social media including Facebook and Twitter were used

In addition, toolkits containing general information, policies and procedures were developed for use in a wide variety of settings. These toolkits were targeted for long term care facilities, doctors' offices, schools, post secondary education institutions, daycare, homeless shelters, group homes and home care settings.

Communications officials also closely monitored correspondence received from the public. The communications campaign was adjusted when trends were evident.

A challenge faced with regard to communications had to do with the amount of information being generated. Knowledge about the H1N1 virus, information surrounding vaccine supply and, as a result, details of the health system's response were being generated in real time and on a ongoing basis. As a result, information was sometimes confusing or contradictory to things that had been previously said. This caused some understandable unease and frustration among Nova Scotians.

Throughout H1N1, a key priority was keeping Nova Scotians well informed. Research indicates that government was viewed as a source of credible, current information. A public opinion poll conducted early in 2010 indicated that 79 per cent of Nova Scotians said they had adequate information about the H1N1 virus.

Lessons Learned

As we reflect on the H1N1experience, we feel our province did many things well. Overall, our response was effective. However, in the reaction to any emergency, there are always areas for improvement.

An extensive lessons learned process has been undertaken by the Department of Health Promotion and Protection, the Department of Health, the nine district health authorities, and the IWK Health Centre. Each of these organizations is updating and developing operational plans to help the health care system be even better prepared for the next pandemic and other potential emergencies.

Based on lessons learned from the H1N1 experience, a number of key areas have been indentified for improvement:

- With our provincial and territorial colleagues, Nova Scotia is working with the Government of Canada to become more involved in the process to acquire and approve pandemic vaccines. Progress has already been made in this area.

- The lack of an electronic information system greatly limited Nova Scotia's ability to track the number of people receiving vaccine in a complete and timely manner. Development and implementation of such a system is a critical priority across Canada.

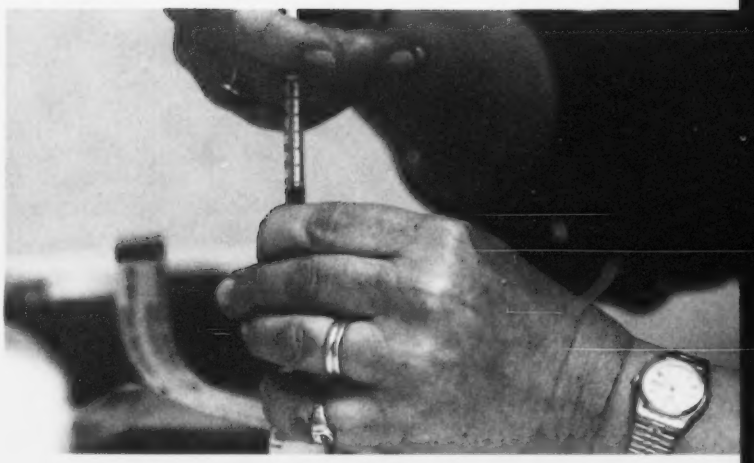
- Plans for future pandemics need to include contingencies for variations in disease severity and public demand for both vaccine and health care services. While the planning of our mass immunization clinics adapted and improved, there is still a need to develop and implement strategies to minimize wait times and lineups.

- The coordination of an emergency response across the health system is complex. The H1N1 experience increased the communication and collaboration between public health and primary health care but this relationship needs to develop further. There is also a need to better define the relationship and connect the work of independent health care practitioners to the rest of the health care system.

- Alternate models of providing care, such as flu assessment centres, proved effective and significantly reduced the demands of H1N1 on Emergency Departments. This work needs to be incorporated for all types of emergencies that impact the health system.

- In order to improve the effectiveness of our communications, Nova Scotia needs to expand the use of social media and continue to build on relationships with other communications professionals within and outside the health care field.

On July 28, 2009, Nova Scotia's Auditor General submitted a Special Report on Pandemic Preparedness to the House of Assembly containing 33 recommendations. The recommendations were accepted by government and work was immediately started to make these changes. As of the release of this report, approximately 70 per cent of the Auditor General's recommendations that apply to the departments of Health, and Health Promotion and Protection are complete. The departments are currently working on the remaining recommendations as part of ongoing emergency preparedness.



Conclusion

The H1N1 pandemic challenged the public health and health care systems, businesses, communities and families across the province. While we should all take pride in how we handled this situation, both professionally and personally, we must also recognize there are improvements to be made. These improvements will help us better prepare and respond to other emergencies if, and when they arise.

For our part, the Department of Health Promotion and Protection, the Department of Health, the nine district health authorities and the IWK Health Centre are already working together to begin to make the improvements noted through the lessons learned process. Through these changes, and those recommended by the Auditor General, we will make emergency planning for the province's health system even more effective and strengthen the health system's response to future emergencies. This will help us achieve our overall goal of keeping Nova Scotians safe and healthy.

NOVA SCOTIA